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Postgraduate School of the Navy

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POSTGRADUATE SCHOOL OF THE NAVY

REAR ADMIRAL E. E. HERRMANN

AS NAVAL science and technology have advanced, so too the United States Naval Postgraduate School has consistently moved ahead on two interrelated fronts. One front involves the training of naval and other officers to keep pace with advances in techniques—a "must" if we are to realize the maximum in national defense from our scientific research and development. The other involves motivating these same officers to push still further forward in scientific studies and outlook so that ultimately even greater technical advances may result.

In recent years the School outgrew its old physical plant at Annapolis, Maryland, and early this year it moved to more spacious facilities at Monterey, California. There it is continuing on an expanding basis the advanced education of officers.

Since its founding in 1909, the School's development has continually paralleled the Navy's growing interest in science and technology until today the advanced instruction and training are tailor-made to fit the Navy's specialized needs. The School functions as the headquarters and nerve center of the Navy's advanced education for officers. Under it is established the Engineering School for the technical curricula formerly conducted at Annapolis. The existing General Line School at Monterey and the Naval Intelligence School at Anacostia, District of Columbia, are other components of the Naval Postgraduate School. Thus the move to Monterey consolidated in one place all the schools except the Naval Intelligence School.

The mission of the Naval Postgraduate School is to conduct and direct the advanced instruction of commissioned naval officers as required to meet the needs of the Navy. The institution is unique among service schools in that, under a 1947 Act of Congress, it is empowered to award bachelor's, master's and doctor's degrees.

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By a large part of the American public, a naval officer is considered fully educated when he graduates from the United States Naval Academy or when he comes into the Navy after acquiring an education in a civilian school. But to the Navy that is just the begining of a continuing education. The Naval Postgraduate School, through its General Line School, gives courses of instruction to fill gaps in the naval education and experience of junior officers, and through its Engineering School gives technological courses, many leading to advanced degrees. It also sponsors the further education of outstanding students to the doctorate level at civilian institutions. The Naval War College, the National War College and the Industrial College of the Armed Forces provide higher professional education.

Three paramount considerations make it essential for the Navy to continue expanding its advanced instruction and training of officers. First, of course, is the advance of science and technology—an advance which is reflected in increasingly complex equipment of naval vessels. A modern destroyer, for example, contains more complicated equipment than a cruiser back in 1925 when radar was only a scientist's dream. Second, as demonstrated by World War II, the conduct of modern total war requires that within the military there must be at least a cadre of officers with higher technical education who can provide the liaison which is essential if the fruits of research are to be promptly and effectively applied to military problems. Third, while most officers need not be specialists, still it is essential that they be professionally competent, well rounded in basic knowledge and up to date in current technical developments. Thus the education of a successful officer is an ever continuing need and should include periodic return to appropriate service schools.

Postgraduate instruction of naval officers is conducted at Monterey, at Anacostia and at outstanding civilian institutions. The service schools teach those subjects peculiarly fitted to the Navy, while the civilian schools provide instruction in subjects for which it is impractical or uneconomical to provide comparable facilities at the Naval Postgraduate School.

At present there are four hundred and thirty-two student officers enrolled in the Engineering School, including sixty-four Marine Corps, twenty-two Army, twenty-eight Coast Guard, one Public Health Service and seventeen foreign officers. Also under the School's administration and close supervision, there are an additional four hundred and fifty-three student officers pursuing

advanced study at various civilian colleges and universities.

The Engineering School is administered by a Director, under the Superintendent, with a naval staff of twenty-three officers and a civilian faculty of seventy. Through continual liaison with sponsoring bureaus and offices of the Navy Department, the naval staff insures that curricula are kept abreast of requirements. The naval staff also performs administrative duties and "Dean of Men" functions. The civilian faculty, headed by an Academic Dean, presents the various scientific courses, both basic and advanced. The naval staff provides a small number of instructors for the few strictly naval subjects which are taught at the School.

Most of the individual courses are at graduate level and it is often possible for a student officer to qualify for a graduate degree. Although the attainment of a degree is secondary to the objectives of the School's various curricula, student officers are encouraged to work toward this goal when possible. This gives added incentive and assists in maintaining a high academic level of study and instruction. Normally the attainment of a master's degree under the Naval Postgraduate School's auspices requires two or three years.

Buildings in the foreground house the School, while those in the rear serve as temporary laboratories. U. S. Navy Photograph

A major function of the Engineering School is the education of well-qualified specialists as required by the technical bureaus of the Navy. Quotas for such specialists are established by the Bureau of Naval Personnel. Curricula designed to produce the desired qualifications are worked out by the Naval Postgraduate School in liaison with the sponsoring bureaus or offices. Thus the needs of the Navy are met on a made-to-order basis.

Some curricula are given entirely at the Naval Postgraduate School, some entirely at civilian schools, while others are given in part at both. Because engineering specialties are in greatest demand within the Navy, the School has developed a strong faculty and well-balanced curricula in electronics, aeronautical, electrical, naval and ordnance engineering, operations analysis, radiological defense, communications and aerology. Completion of most of these curricula requires either two or three years. The final year for some—notably radiological defense and specialized ordnance engineering courses—is at civilian institutions.

The Naval Postgraduate School staff makes all arrangements with civilian schools best qualified to cover the desired curricula. Officer students are enrolled; regular checks are made on the scope and adequacy of instruction and the necessary records are maintained at the School.

The General Line School offers students a one-year professional curriculum which has been specially designed to round out the naval background of junior officers. Under the Superintendent of the Naval Postgraduate School, the General Line School is a separate entity, headed by a Director, and with a naval staff of fifty-one and a civilian faculty of twelve. The student body totals five hundred and sixty this year and is expected to grow to more than one thousand. Courses are given in mathematics, electrical and electronics engineering, navigation, military law, international law, ordnance and gunnery, seamanship, logistics, leadership and administration, strategy and tactics, anti-submarine warfare, aerology, damage control, foreign relations and intelligence, naval engineering, radiological defense, communications, aviation and submarines.

At present the student body comprises officers commissioned from sources *other than* the Naval Academy or Naval Reserve Officer Training Course colleges—officers who have transferred to the regular Navy from former reserve or temporary status. However, with expanded facilities at Monterey in sight, plans are being pushed that will require all junior line officers to take this year of education about five to seven years after being com-

missioned. Selected graduates of the General Line School will then be assigned to attend the Engineering School, or the Armed Forces Staff College, or junior courses at the Industrial College of the Armed Forces or the Naval War College.

The Naval Intelligence School at Anacostia is concerned with training officers for intelligence and related duties. It also teaches foreign languages in which the Navy desires to qualify interpreters. Although under the direction of the Superintendent of the Naval Postgraduate School, supervision of curricula here is exercised largely by the Division of Naval Intelligence in the Office of the Chief of Naval Operations.

Determined efforts to provide education beyond the undergraduate level had begun a decade before the founding of the Naval Postgraduate School. Rear Admiral George W. Melville, then Engineer in Chief of the Navy, was a leader of the move in 1899. Later, in 1907, Rear Admiral Charles W. Rae, Engineer in Chief, re-emphasized this need and reported that favorable results had been obtained from an engineering class conducted in the Bureau of Engineering in 1904 .

The School was originally established as a department of the United States Naval Academy in 1909 and occupied space in one of the Academy's buildings. In 1919 larger quarters were provided by shifting into a former Marine barracks on the Academy grounds. As far back as 1944, however, it became apparent that larger physical facilities would be needed. In 1947 the Congress established the Naval Postgraduate School as a separate entity, and at the same time plans and legislation were initiated to provide suitable facilities for the School at Monterey. Although facilities at the new location were not yet complete, the move was undertaken in November 1951 because of overcrowding and inadequacy of space at Annapolis. The full fruition of plans for expanding the School's facilities and extending its educational scope will therefore probably not be apparent for another year or two.

At present both the Engineering School and the General Line School are occupying interim accommodations in and near the former Hotel Del Monte, at Monterey, California. Steam engineering and ordnance and gunnery laboratories will eventually be developed on a fifty-eight acre beach tract adjoining the main location. Wind tunnel and aeronautical propulsion laboratories will be built on an outlying one hundred acre parcel near an airfield operated jointly by the Monterey Airport Authority and the Naval Auxiliary Air Station. This air station

provides facilities for maintaining flight proficiency by the approximately five hundred naval aviators attached to or attending the Naval Postgraduate School. The School property also includes a tract on which a one hundred and thirty-five unit Wherry Housing project is now nearing completion and an additional project is about to be started.

The first increment of permanent construction will include a five-story structure providing space for the Departments of Electronics and Physics, Chemistry and Metallurgy, and most of Aerology; a two-story building for the laboratories of the Department of Electrical Engineering; classrooms and drafting rooms for the Engineering School and some of its departmental offices; and a new heating plant. The second increment will include a three-story building to house the Departments of Aeronautical Engineering and Mechanical Engineering; and a twelve hundred seat lecture hall. Future additions will include buildings for the General Line School, a library, permanent buildings for steam engineering, ordnance and gunnery, wind-tunnel and aeronautical propulsion laboratories, and an infirmary, barracks, and mess hall for enlisted complement, gymnasium, auditorium and chapel. The entire building program will take at least five years to complete.

The formative years of the Naval Postgraduate School were crucial ones during which our Navy was feeling the impact of the very technology which it had itself done so much to foster in the industrial world. The steel and electrical industries, for example, acknowledge that much of their early progress resulted from Navy demands. This process has continued ever since and today the Navy is a leading factor in applying electronics, to name just one field of endeavor, to all manner of military uses which, in turn, inspire a host of non-military applications.

At present the Navy also is playing a prominent role in applications of nuclear power—applications which will certainly have direct and far-reaching consequences in peacetime pursuits. It behooves us, then, to be mindful of the necessity for keeping our educational efforts in pace with our efforts to exploit fully the vast potentialities of science and technology. We must never give second priority to the development of the brains required to design and use competently the products of our generously supported research and development programs.

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